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SELECTION OF HARDWARE/SOFTWARE FOR THE PADIS SYSTEM.

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A. Introduction

1. The possibility of establishing a Pan-African information system geared towards development was reviewed in the study on the DEVSIS-Africa system. The PADIS system was established on the basis of proposals and recommendations contained in that study. The structure of the PADIS system will therefore, often draw on the concept proposed for DEVSIS - the information system for development sciences. The selection of equipment has resulted from an in-depth review both in this study and in the report by M. Pobukovsky, Chief of the UNESCO, Library, Archives and Documentation Services.

B. Selection of Software

2. PADIS is a computerized system designed to serve as a model for the future participating centres. For bibliographic processing, the project opted for selected software packages that could be obtained by member States at no cost. The choice was made from three software packages which met this requirement.

3. (a) The ISIS system (Integrated Set of Information System) developed by ILO and available from UNESCO. It is widely used among IBM 360 and 370 owners operating under the O.S. system.

(b) MINISIS, developed by IDRC in Ottawa, is comparable with ISIS for the interface/user, but is is specifically designed for mini-computers. The files produced by these systems are interchangeable with a minimum amount of conversion. Morocco, Senegal, Tunisia and Zaire are among the current users of the System in Africa.

(c) MILOR is an interactive information retrieval software package written in FORTRAN IV. Although it has a greater flexibility than ISIS and MINISIS it is not as yet so widely used.

4. In view of the fact that the PADIS co-ordination centre represents the hub for a network of national and subregional information and documentation centres and since the MINISIS and CDS/ISIS (O.S. version) software are compatible, Mr. Pobukovsky recommended that PADIS adopts both systems gradually.

C. Selection of hardware

5. Although long-term plans for PADIS call for direct linkage of computers and computer terminals located in member States with the central data base via a telecommunication network, the choice of computer was not determined by the full operational capability required for phase III (1985-1989).

6. It was felt that a low-cost, high performance computer selected to meet the system's objectives would meet the needs for phases I and II. 1/ Additionally, since PADIS is intended to serve as a model for a number of participating national and subregional centres, it was considered important to take into account its cost and availability of software at no extra expense.

7. The selection criteria were as follows :

(a) Quality of the hardware;
(b) Conditions of maintenance;
(c) Training facilities;
(d) Delivery time;

1/ Software/Hardware requirements and recommendations concerning the PADIS coordinating centre. DEVSIS-Africa.

(e) Availability of basic software;
(f) Availability of documentation;
(g) The cost of the hardware and the software required;
(h) Back-up possibilities.

8. The following computers were considered in view of the criteria mentioned above and because they were compatible with MINISIS or CDS/ISIS :

(a) Hewlett - Packard 3000 Series III
(b) ITEL
(c) AMDAHL
(d) IBM 380/148
(e) RIAD ES 1035

D. Present PADIS equipment

(a) Hardware

9. Hardware for the PADIS project was selected following a careful review of the existing information system. The study was undertaken by Mr. Pobukovsky. Recommendations were made on both the software and the hardware required for the PADIS co-ordination centre.

10. The study led to the selection of MINISIS software and the HP 3000 III series computer. Because IDRC was providing the MINISIS software and in view of the price of the basic configuration, the technical specification and maintenance facilities in Addis Ababa, the HP 3000 computer was considered the most appropriate for phase I and II of the project. In its letter of recommendation to the United Nations purchase committee in New York, the ECA contracts committee, ECA/MULPOC/TANGER/EV/14" Aware of the fact that the funds had been acquired from donor agencies, recognizing that the feasibility studies recommended the suitability of this computer, understanding that the usual bid procedure has been completed." decided to recommend to Headquarters contracts Committee The purchase of the HP 3000 computer.

Furthermore, IBM equipment which met the requirements was not available on the market at the time in Addis Ababa.

In its initial configuration, the HP 3000 series IV was equipped with :

(a) A 512 K octet memory;
(b) Two 120 M octet detachable disks;
(c) Two magnetic tape drive utilities (1.600 B.P.I.);
(d) Two 300 lines/mn. printers;
(e) Its own control panel;
(f) Ten interactive terminals.

11. Since then, the configuration underwent several modifications. The latest was as follows:

(a) A central 2048 K byte memory;
(b) Two fixed 404 M byte magnetic disks;
(c) Two 120 M byte magnetic discs
(d) Two 1000 lines/minute printers;
(e) Forty-eight interactive terminals linked to the central unit;
(f) A graphic configuration (a HP 9872S curve plotter and a 2631 G printer)

(b) Software

12. The software currently available in PADIS is generally similar to the supplier's (HP);specialized software is also available.

b.1. HP Software

13. The operating system - MPE IV - is a flexible and powerful system which allows both transaction and batch processing. Its basic operating software includes

(i) COBOL, FORTRAN, RPG II, SPL and PASCAL programming languages;

(ii) Sorting and merging utilities SORT/MERGE;

(iii) The data base management system - IMAGE 3000 with interrogation language - QUERY 3000;

(iv) The management and file editing utilities - FCOPY:file/copying
EDITOR:file editing
KSAM:Keyed sequential Access Method.

(v) Acquisition and checking utilities - VIEW 3000

14. b.2. Special software

- MINISIS, a bibliographic data base management system supplied by IDRC, used for the development of bibliographic data bases and the management of the PADIS-CORE data base.

(i) SPSS, a set of programmes for statistical applications;

(ii) INSIGHT: a programming tool to be used by computer experts for developing on-line applications around data bases managed by IMAGE 3000;

(iii) ISEA:interactive software for econométric analysis.

15. As a computing centre, PADIS has developed new applications for the ECA administration.

E. Conclusion:

16. Owing to the size and the multiplication of bibliographic data bases developed and managed by the system as well as the increasing number of users, the set-up is rapidly being saturated and the response time has deteriorated. The configuration selected for phase I is therefore inadequate for continuing PADIS services and for serving as the ECA computing service.

17. Since the beginning of the project, this configuration has been considered as a first stage in establishing PADIS computer centres. Under an arrangements with UNDP and ECA the system has also been used byECA (UNDP provided funds for the computer and ECA provided the staff to operate the centre). This arrangement was adopted to overcome resource limitations and to maximize the rate of utilization of the system. Steps are being taken to increase present capacity by installing a new HP 3000 series 44 computer and disk capable of providing increased processing power and backup facilities. It will then be possible to dedicate one configuration to the PADIS project.

F. Reprography and printing

18. "Having access only to citations and abstracts of literature available elswhere and not being able to obtain a copy for closer examination reduces the usefulness of an information system. Therefore PADIS is working towards providing copies of all literature cited in its bibliographies and indexes.2/PADIS selected the microfiche as the most practical medium for the duplication and conservation of primary documents. Use of microfiches will considerably reduce the cost of storage, reproduction and postage and therefore the time required for delivery of information to the user. Where microfiche readers or reader/printers are not available to the uses of the System will make an effort to provide photocopies either from microfiches or from original documents, if available.

19. A microfiche laboratory has therefore been installed at the PADIS centre to process documents for a central microfiche file from which copies can be made.

20. Equipment available in the microfiche laboratory is as follows:

(i) 2 BELL & HOWELL Microfiche cameras;
(ii) 1 microfiche film developer;
(iii) 1 BELL & HOWELL Jacket filler:

2/ Study Devsis Africa

(iv) 1 AM Brunning OP 10 Diaso Copier
(v) 1 ABR-610 Reader/Printer;
(vi) 20 microfiche readers.

21. With regard to printing, "since the documents to be distributed must be of high quality, error free, easy to read and published with a minimum time lag," 3/ PADIS has acquired the following high quality printing equipment :

(i) Plate maker;
(ii) Plate developer;
(iii) Plate dryer;
(iv) 3 offset machines 210-318-213;
(v) Gestetner OPC 7D Camera.

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